Homework 4 Stacks

1. Describe why a stack is not a suitable data structure for holding client records at a call centre. Suggest a more suitable data structure and justify why it is suitable. [4]

2. If a stack is implemented as a dynamic data structure, what bounds the number of items that can be pushed? [1]

3. The operation peek() returns the top item of a stack without removing it from the stack.
   What should happen if a peek() is attempted on an empty stack? [1]

4. Complete the following to show the state of a stack after the indicated operations.
   The stack can only hold 4 items in total. [4]

Instruction	Stack	Front	Result
stack = new array(4)	[]	-1	
push(rabbit)			
push(fox)			
push(mouse)			
peek()			
pop()			
pop()			
push(hedgehog)			
push(magpie)			
push(badger)			
isFull()			
peek()			
pop()			
pop()			
pop()			
pop()			
isEmpty()			

[Total 10 Marks]